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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/814,082	03/10/1997	MASANORI TAKAHASHI	684.2465	4251

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EXAMINER

NGO, HUYEN LE

ART UNIT PAPER NUMBER

2871

DATE MAILED: 06/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

08/814,082

Applicant(s)

TAKAHASHI ET AL.

Examiner

Julie-Huyen L. Ngo

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/9/03.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 7, 13, 14 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7, 13, 14 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-3 and 7 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In line 2 of claim 1, the recitation calling for "a substrate having a part of a display panel" constitutes new matter since the disclosure as originally filed, for example figure 1, discloses that the substrate 1b having the whole display panel formed on it! It appears that the substrate is a part of the display panel.

Claims not specifically discussed above are objected to as bearing the defect(s) of the claim(s) from which they depend.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said

subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 7, 13, 14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted Prior Art (APA) and in view of Kishigami (US 5,467,210).

As to claims 1 and 13, Applicant's APA discloses, in figure 13, a display apparatus or a circuit connection structure comprising:

- At least one substrate (1bp), which is a part of a display panel, having a pixel electrode extending to form an electrode terminal (12p) formed on a peripheral side of said at least one substrate;
- a circuit board 3p disposed with a space between said circuit board and said at least one substrate (1bp) and having thereon an electrode terminal for supplying electric power and control signals to the semiconductor device;
- a semiconductor device comprising a driver IC 5p, said semiconductor device having a first/output electrode (15p) and a second/input electrode (15p) for supplying drive waveforms to the pixel electrode of the display panel; and
- a flexible wiring member (4ap) having conductors (17), wherein opposite ends/first and second conductor ends of the conductor are connected to the second electrode and the electrode terminal of said circuit board, respectively, and

wherein said semiconductor device (5p) is connected to the circuit board (3p) via a flexible wiring member disposed in a lateral position with respect to the at least one substrate and bridged the space between the substrate (1bp) and the circuit board (3p).

However, the semiconductor device (5p) in the APA device does not have the first/output electrode (15p) directly connected to the electrode terminals (12p) of the substrate (1bp), and the Driver IC located over the space; and the first/output electrode of the semiconductor device connected to the electrode terminal on said at least one substrate with an anisotropic conductive adhesive.

Kishigami teaches (abstract, col. 5, lines 57-67 and figure 4) connecting the electrode terminals (14a, 17a, 20a) of substrate (13) to the corresponding bumps (41) of electrodes (26, 27 and 28) on the semiconductor device (21) with an anisotropic conductive adhesive 42 for easy replacement or detachment of defected panels/boards. Doing so would also reduce the manufacturing steps and cost of the LCD module (11).

Therefore, it would have been obvious for one of ordinary skill in the art to connect the semiconductor's first/output electrode (15p) to the electrode terminals (12p) of the first substrate (1bp) with an anisotropic conductive adhesive in Applicant's APA device, as taught by Kishigami for the reasons as set forth above. Doing so would obviously have the semiconductor device bridges the space between the substrate (1bp) and the circuit board (3p) such that the driver IC 5p is located over the space; and the first /output electrode of the semiconductor device connects to the electrode terminal on the substrate with an anisotropic conductive adhesive.

Although the circuit board (3p) in the APA device does not clearly show an electrode terminal connected to one of the conductors' opposite ends, it is well known in the art for a circuit board to have an electrode terminal formed thereon for making

electrical contacts between a circuit board and any other circuit boards, e.g., a flexible wiring member or any other connecting boards.

Therefore, it would have been obvious for one of ordinary skill in the art to realize that there is an electrode terminal formed on the circuit board (3p) of Applicant's APA device, and to connect the opposite ends of the conductor 17 to the second electrode of the semiconductor and to the circuit board's electrode terminal, respectively for making electrical contacts between the circuit board (3p) and the flexible wiring member (4ap).

As to claim 2, said semiconductor device as modified Kishigami would obviously have the first and second electrodes structured to act as output and input electrodes (15p), respectively, thereof so as to receive input data from the circuit board and supply output signals to the substrate, thereby driving an electronic device.

As to claims 3 and 14, it is well known and conventional in the art to connect the electrode terminals of different panels/boards, e.g., a flexible tape carrier package (FTC) and driver circuit board or Printed Circuit Board (PCB) to each other by tape-automated bonding method (admitted by Applicant on page 1, line 25) for simplifying manufacturing steps and for easy maintenance.

Therefore, it would have been obvious for one of ordinary skill in the art to employ tape-automated bonding method to connect the semiconductor device (5p)'s second electrode (15p) to one of the opposite ends of the conductors (17) on a flexible wiring member (4ap) for simplifying manufacturing step and for easy maintenance.

As to claims 7 and 18, the connection between the second electrode (15p) of the semiconductor device (5p) and one of the opposite ends or the first conductor end of the conductor on the flexible wiring member (4ap) is sealed with a resin (16p). See figure 13.

Response to Remarks

Applicant's argument filed on May 9, 2003 (paper no. 31) has been fully considered but they are not persuasive.

In response to Applicant's remarks regarding the Applicant's APA device (figure 13) does not show "the semiconductor device bridges the space between the first substrate and the circuit board, such that the Driver IC is located over the space, and the first/output electrode of the semiconductor device is directly connected to the electrode terminal on said at least one substrate with an anisotropic conductive adhesive."

Applicant is to note that these features are fully meet as figure 13 of Applicant's APA been modified by the teaching of Kishigami as applied above in the rejection. The semiconductor device bridges the space between the first substrate (1bp) and the circuit board (3p), such that the Driver IC 5p is located over the space, and the first/output electrode of the semiconductor device is directly connected to the electrode terminal on said at least one substrate with an anisotropic conductive adhesive.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Julie-Huyen L. Ngo whose telephone number is (703) 305-3508. The Examiner can normally be reached on T-Friday.

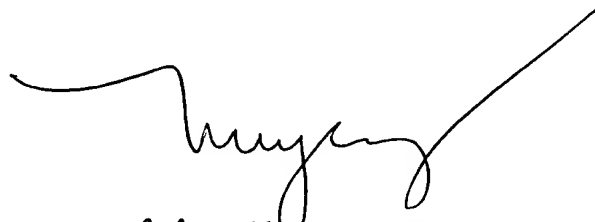
If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor, Mr. Robert H. Kim can be reached at (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-4709 for regular communications and (703) 746-4709 for After Final communications. Please contact the Examiner before faxing any paper to the Office.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

June 14, 2003

A handwritten signature in black ink, appearing to read 'Julie-Huyen L. Ngo', with a long, sweeping horizontal line extending to the right.

Julie-Huyen L. Ngo
Patent Examiner
Art Unit 2871